

### **REMARKS**

This is intended as a full and complete response to the Office Action dated February 2, 2009, having a shortened statutory period for response extended two months to expire on July 2, 2009. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-20 remain pending in the application and are shown above. Claims 1-20 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Claim 1 is amended to clarify the invention. These amendments are not presented to distinguish a reference, thus, the claims as amended are entitled to a full range of equivalents if not previously amended to distinguish a reference. Support for amended claim 1 is based on claims 1 and 3 of the PCT application as originally filed. Basis for referring to the particles requiring their adhesive properties only when they are in contact with the outer surface of the pest is found on page 4, lines 6 to 7 of the PCT application as originally filed.

### ***Claim Rejections – 35 USC § 103***

Claims 1-4 and 6-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Howse et al.* (WO 00/01236; hereinafter "*Howse*"), in view of *Saini et al.* (American J. Roentgenology, 1988, 150(4), 735,743; hereinafter "*Saini*"). Applicant respectfully traverses the rejection.

The Examiner has noted that one difference between claim 1 and *Howse* is that *Howse* only teaches the use of magnetized materials and does not teach the use of unmagnetized materials. However, the Examiner has suggested that this difference does not render the claim inventive over *Howse* in view of *Saini*.

In response, the applicant submits that a person of ordinary skill could not combine the teachings of *Howse* and *Saini* to arrive at claim 1 of the present application. This is because *Howse* provides specific teaching away from claim 1 of the present application and, in any case, because *Saini* does not provide a person of ordinary skill with the necessary expectation of an advantage to modify *Howse* to arrive at claim 1 of the present application.

In addition, the applicant has amended the wording of claim 1 in order to further emphasize the differences between claim 1 and *Howse*.

By way of background, the present application defines two types of magnetic materials (page 2: lines 14 to 17). These two types are "*hard*" magnetic materials, which retain their magnetism outside of an applied magnetic field, and "*soft*" magnetic materials, which lose their magnetism immediately or very shortly after they are removed from an applied magnetic field.

Accordingly, two hard magnetic materials magnetically interact with each other (either by attraction or by repulsion) because they both possess a permanent magnetic field. In addition, a hard magnetic material magnetically interacts with a soft magnetic field (generally by attraction) because the hard magnetic material causes a magnetic field to be induced in the soft magnetic material. However, two soft magnetic materials do not magnetically interact with one another because neither possesses a permanent magnetic field necessary to induce a magnetic field in the other soft magnetic material.

*Howse* relates to a method of controlling flying or crawling insects (page 1: lines 3 to 6). The method involves exposing an insect to a composition comprising a hard magnetic material, i.e., a material that is permanently magnetized (page 2: lines 32).

The applicant notes that *Howse* suggests the use of soft magnetic materials "*if they have been magnetised or become magnetised on admixture with hard magnetic materials*" (page 4: lines 6 to 7). In other words, *Howse* suggests the use of soft magnetic materials pre-magnetised by the presence of a hard magnetic material but, as noted by the

Examiner, *Howse* does not suggest the use of soft magnetic materials that have not been pre-magnetised.

The Examiner has suggested that there is only one possible explanation for the behavior observed in *Howse*, namely that insects possess at the very least a minor magnetic field that interacts with the permanent magnetic polarization of *Howse's* material.

In response, the applicant submits that this conclusion requires an *ex post facto* analysis of *Howse's* teaching. The applicant further submits that *Howse's* explicit teaching is that a different mechanism than that suggested by the Examiner is operating.

In particular, the applicant agrees with the Examiner that *Howse* places emphasis on its materials' magnetic properties. Therefore, the attraction between *Howse's* materials and its insects could be considered to result from some form of magnetic interaction.

However, as noted above, there are different types of magnetic interaction. These different types of interaction mean that *Howse's* hard magnetic materials magnetically interact with both hard materials that possess their own magnetic field and with unmagnetized soft materials that become magnetically polarized in the presence of *Howse's* hard magnetic materials.

Throughout its specification, *Howse* consistently emphasizes the importance of providing a material with a permanent magnetic field. At no point does *Howse* suggest providing a soft, unmagnetized material by itself. In fact, when *Howse* mentions the use of a soft, unmagnetized material, *Howse* explicitly states that, according to its teaching, it is essential that the unmagnetized material is mixed with material having a permanent magnetic field.

The reasonable conclusion that can be drawn from this explicit teaching of *Howse* is that *Howse* understands that its materials are required to induce a magnetic field in the surface of an insect in order to adhere to the insect. In other words, *Howse* contemplates

that the interaction between its materials and the surface of an insect is akin to a hard magnetic material interacting with an unmagnetized soft magnetic material.

In other words, the reasonable conclusion from an analysis of *Howse* is that the permanent magnetic field that its materials are required to possess performs some function, rather than the permanent magnetic field being a redundant feature.

In contrast, the inventors of the present invention have found that the presence of a magnetic field is not an essential requirement for pest control. This realization has allowed a number of drawbacks with the teaching of *Howse* to be overcome (see page 2: lines 10 to 22 of the PCT application as originally filed):

*"The use of magnetic materials of the form as described in [Howse] has the following disadvantages. First, the magnetic surface has very poor retention properties for active ingredients, especially if, as is commonly the case, the active ingredients are very volatile. Secondly, active ingredients contained within the inner core of a magnetically-coated particle are not easily accessible to the surface of the pest. Thirdly, the magnetic particles are "hard" magnets which retain their magnetism, as opposed to "soft" magnets of the type used, for example, in solenoids, in which the magnetism is lost immediately that they are removed from a magnetic or electric field. Hard magnetic particles are difficult to produce in a specified size range, weight or shape because they lose their magnetism, when milled. Fourthly, because the only economic source of hard magnetic particles is from the finings of mining operations, toxic metallic salts may be present as contaminants, and it would be undesirable to introduce these into a crop environment."*

Therefore, not only does *Howse* provide specific teaching away from claim 1 of the present application, the particular advantages associated with the use of the present invention are not recognized in *Howse*.

The applicant notes that the Examiner has cited *Saini* to suggest that, despite the explicit teaching of *Howse*, a person of ordinary skill would have modified the teaching of *Howse* to arrive at claim 1 of the present application.

In particular, the Examiner has referred to the right column of page 738 of *Saini* to suggest that *Saini* provides a person of ordinary skill with a reasonable expectation of success of using soft, unmagnetized magnetic materials in place of the permanently magnetized materials of *Howse*. In this regard, the Examiner has specifically referred to the passage in *Saini* that states that “[unmagnetized ferromagnetic] materials can be magnetized to saturation ... even when exposed to relatively weak external magnetic fields (Fig. 1B)”.

In response, the applicant submits that *Saini*'s reference to unmagnetized materials becoming magnetically saturated even when exposed to relatively weak external magnetic fields should be interpreted in light of its specific reference to Figure 1B to determine what is meant by “weak” external magnetic fields.

Figure 1B shows the magnetic properties of a ferromagnetic material at various magnetic field strengths. The x-axis of Figure 1B is given in units of Oersted and the intervals on the x-axis are each 10 Oersted. Figure 1B shows that magnetic saturation of its illustrated materials is reached at a field strength of somewhere around 30 to 50 Oersted.

By way of comparison, the earth's magnetic field is about 0.5 Oersted (in its article about Gauss (unit), Wikipedia states that the earth's magnetic field is 0.5 Gauss; it also states in its articles about Oersted that 1 Gauss = 1 Oersted in a vacuum environment).

Therefore, when *Saini* refers to a “relatively weak external magnetic field”, it is referring to a field of somewhere around 30 to 50 Oersted, i.e., about 60 to 100 times greater than the earth's magnetic field.

Accordingly, *Saini's* teaching is that a magnetic field of one or two magnitudes greater than that of the earth's magnetic field is required in order to achieve magnetic saturation. If the surface of an insect were to have magnetic field associated with it of the order of magnitude described in *Saini*, it would be widely recognized: for example, magnetic compasses would be affected by the presence of an insect.

Therefore, the applicant submits that *Saini* is not directed to the size of magnetic field associated with the surface of an insect. As a result, the applicant submits that *Saini* cannot be used to interpret the possible properties of the surface of an insect.

For these reasons, the applicant submits that *Saini* does not create an expectation of an advantage in a person of ordinary skill of modifying the teaching of *Howse* and that the claims are inventive over a combination of *Howse* and *Saini*.

Thus, *Howse* in view of *Saini* either alone or in combination does not teach, show, suggest, or otherwise make obvious a method of controlling pests, which method comprises exposing a surface of the pest to a particulate composition containing particles of an initially unmagnetized material, which is capable of becoming magnetically polarized when subjected to an electric or magnetic field, said particles being associated with at least one pesticide or behavior modifying chemical, wherein said particles acquire their adhesive properties only when said particles are in contact with an outer surface of the pest as recited in claim 1 and claims dependent thereon. Withdrawal of the rejection of claims 1-4 and 6-20 is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Howse* in view of *Saini*, and further in view of *Westesen et al.* (US 5,885,486; hereinafter "*Westesen*"). Applicant respectfully traverses the rejection.

The deficiencies of *Howse* in view of *Saini* are discussed above. *Westesen* does nothing to cure the deficiencies of *Howse* in view of *Saini*. Applicant submits that claim 5 is allowable for the same reasons discussed above with regard to claim 1. Withdrawal of the rejection of claim 5 is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this Office Action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

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